

Fig-1

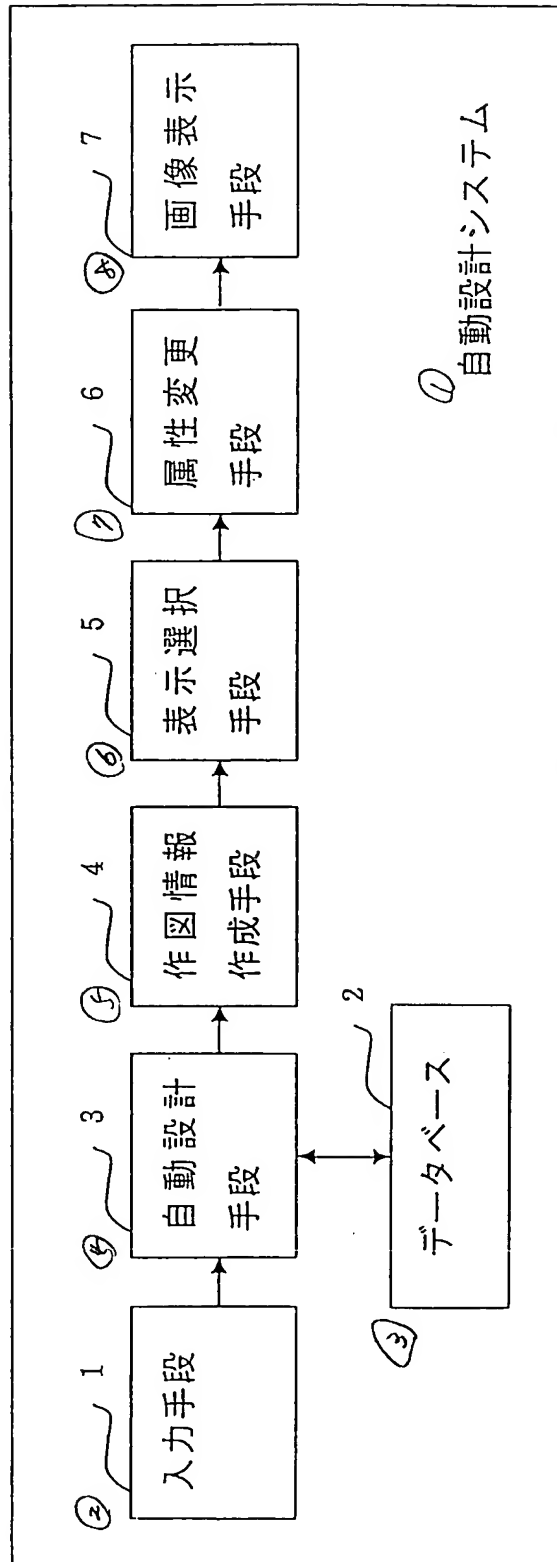


Fig. 2

D n o	r 1
1 0 ~ 3 0	0. 2
3 0 ~ 5 0	0. 3
5 0 ~ 1 0 0	0. 5

D g i	r 2
1 0 ~ 3 0	0. 2
3 0 ~ 5 0	0. 3
5 0 ~ 1 0 0	0. 5

Fig. 3

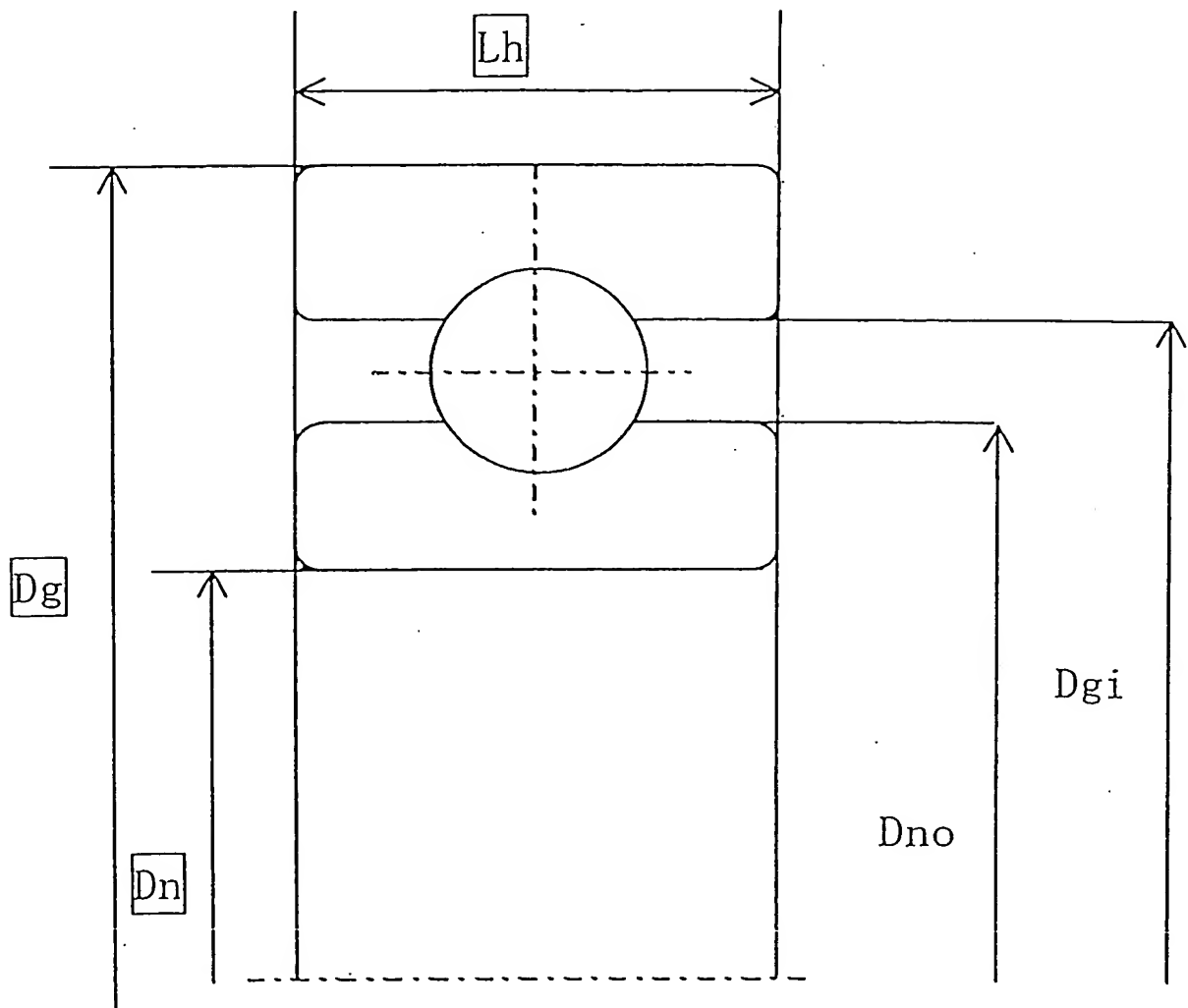
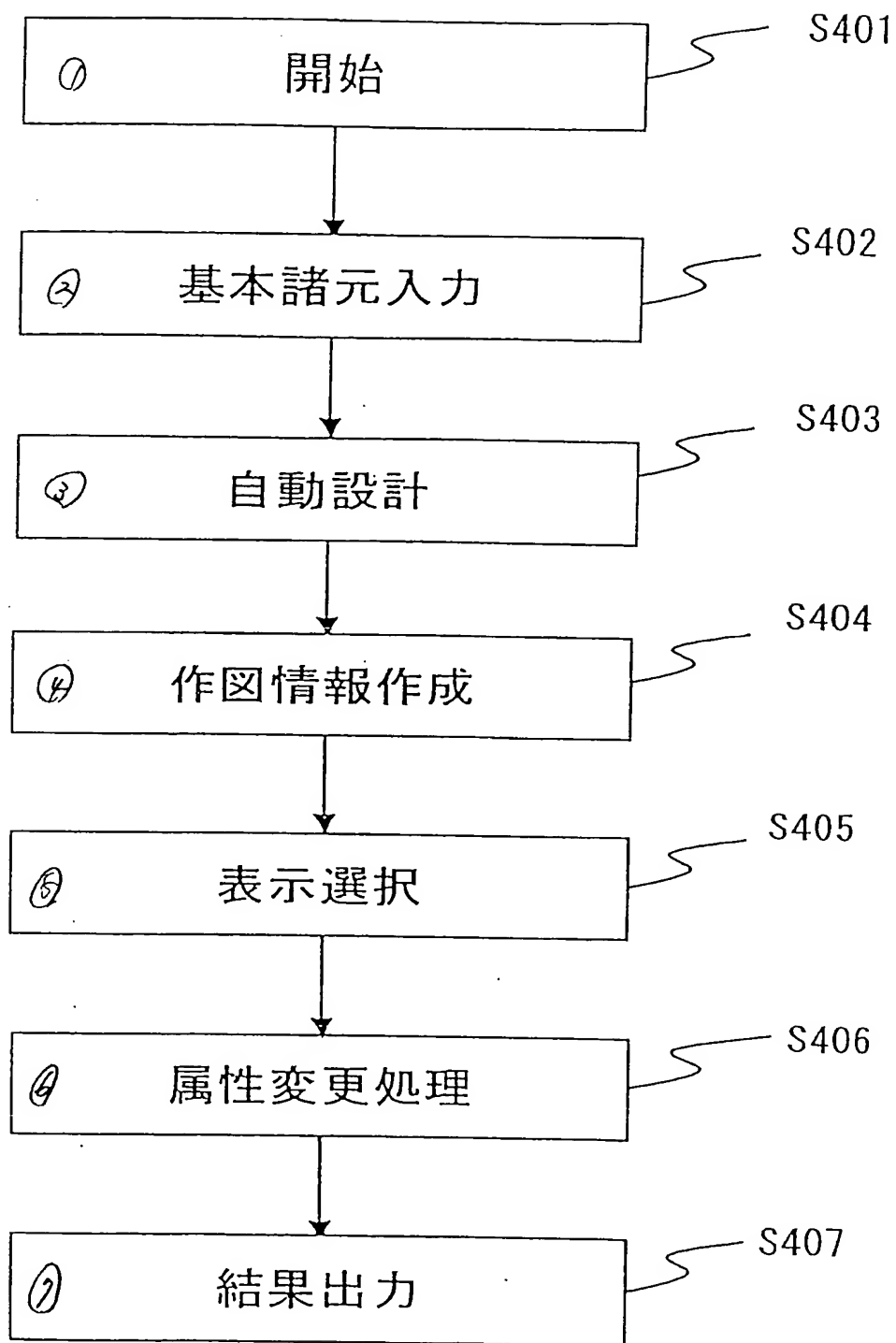


Fig. 4



5 Fig. 5

① 基本諸元を入力してください。

Dn =

Dg =

Lh =

Fig-6

① 詳細部の自動計算処理

$$D_{no} = D_n + (D_g - D_n) / 4$$

$$D_{gi} = D_{gn} - (D_g - D_n) / 4$$

・  
・  
・

① 作図情報の作成

$$X1=X0$$

$$Y1=Y0+Dg/2$$

$$X2=X1+Lh$$

$$Y2=Y1$$

...

...

$$P1=(X1,Y1)$$

$$P2=(X2,Y2)$$

$$P3=(X3,Y3)$$

...

...

$$\text{Line}(P1,P2,y)$$

$$\text{Line}(P2,P3,y)$$

$$\text{Txt}(\text{"}\Phi\text{"},Dg,y,m)$$

$$\text{Txt}(\text{"}\Phi\text{"},Dn,y,m)$$

$$\text{Txt}(\text{" "},Lh,y,m)$$

Fig. 8

① 表示の選択

- ☐ ② 標準表示
- ☐ ③ 入力値表示
- ☐ ④ 変更部表示
- ☐ ⑤ 入力 & 変更部表示

OK





9

Fig. 9

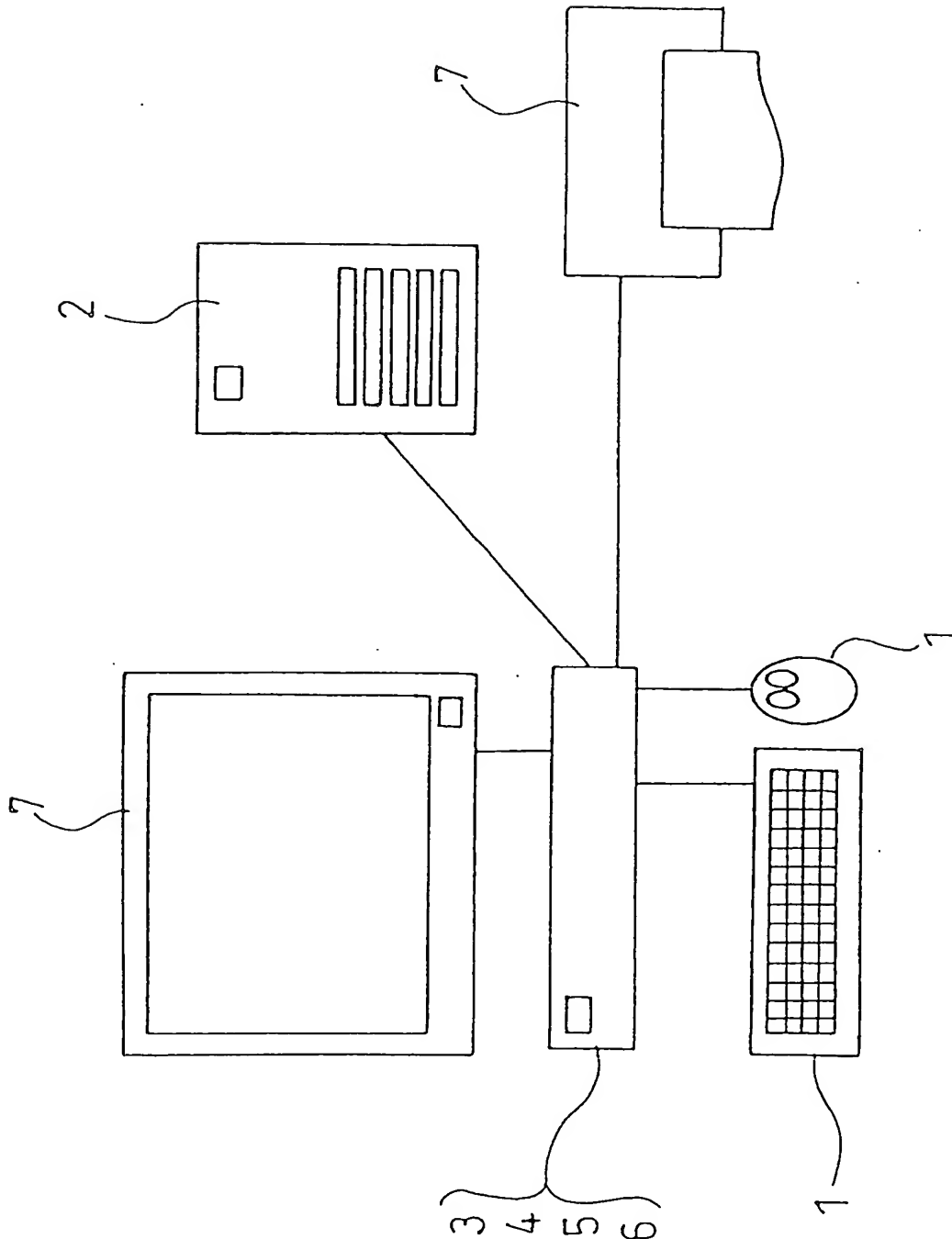


Fig. 10

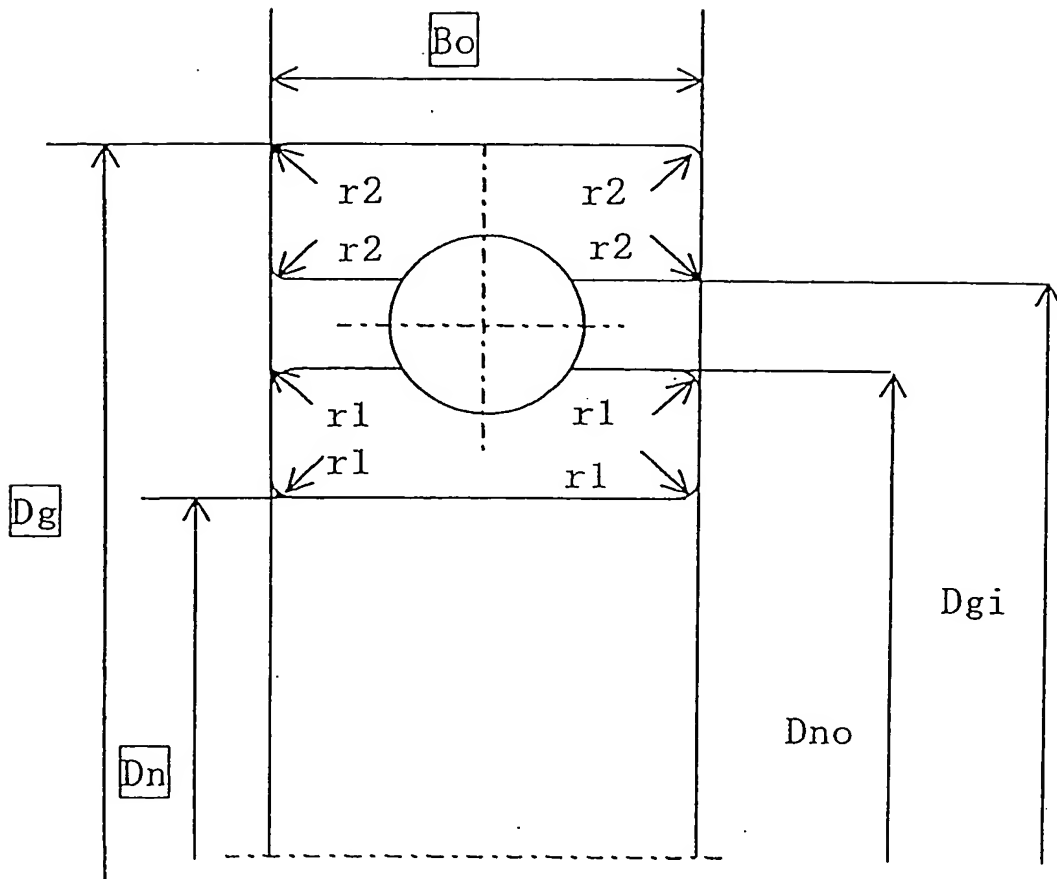
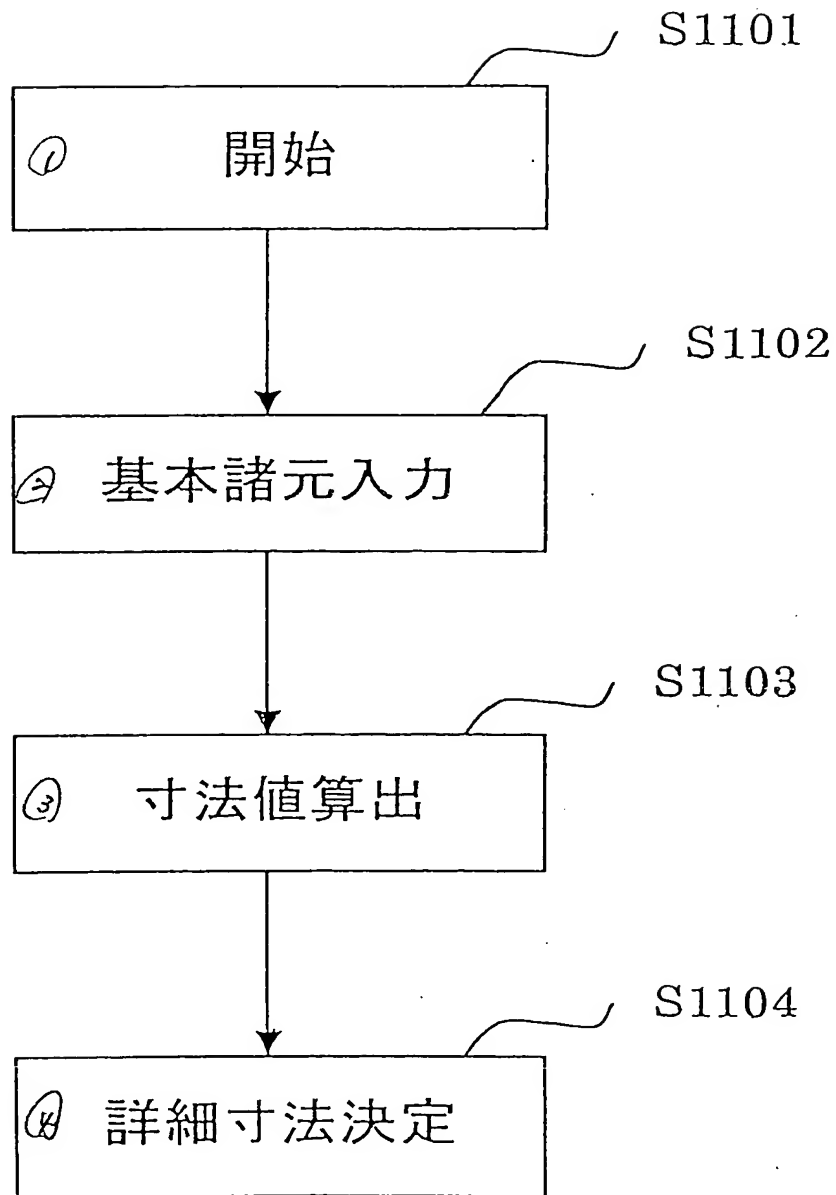


Fig-11



☒ 1 2 Fig.12

①  
基本諸元を入力してください。

Dn =

Dg =

Bo =

①

寸法値の自動計算処理①

$$D_{no} = D_n + (D_g - D_n) / 4$$

$$D_{gi} = D_{gn} - (D_g - D_n) / 4$$

.

②

寸法値の自動計算処理②

$$r_1 = 0.2$$

$$r_2 = 0.3$$

.

.

.

Fig. 14

Dn= 1 0 . 0
Dg= 5 0 . 0
Bo= 1 0 . 0
Dno= 2 0 . 0
Dgi= 4 0 . 0
r 1 = 0 . 2
r 2 = 0 . 3

OK

NG

Fig. 15

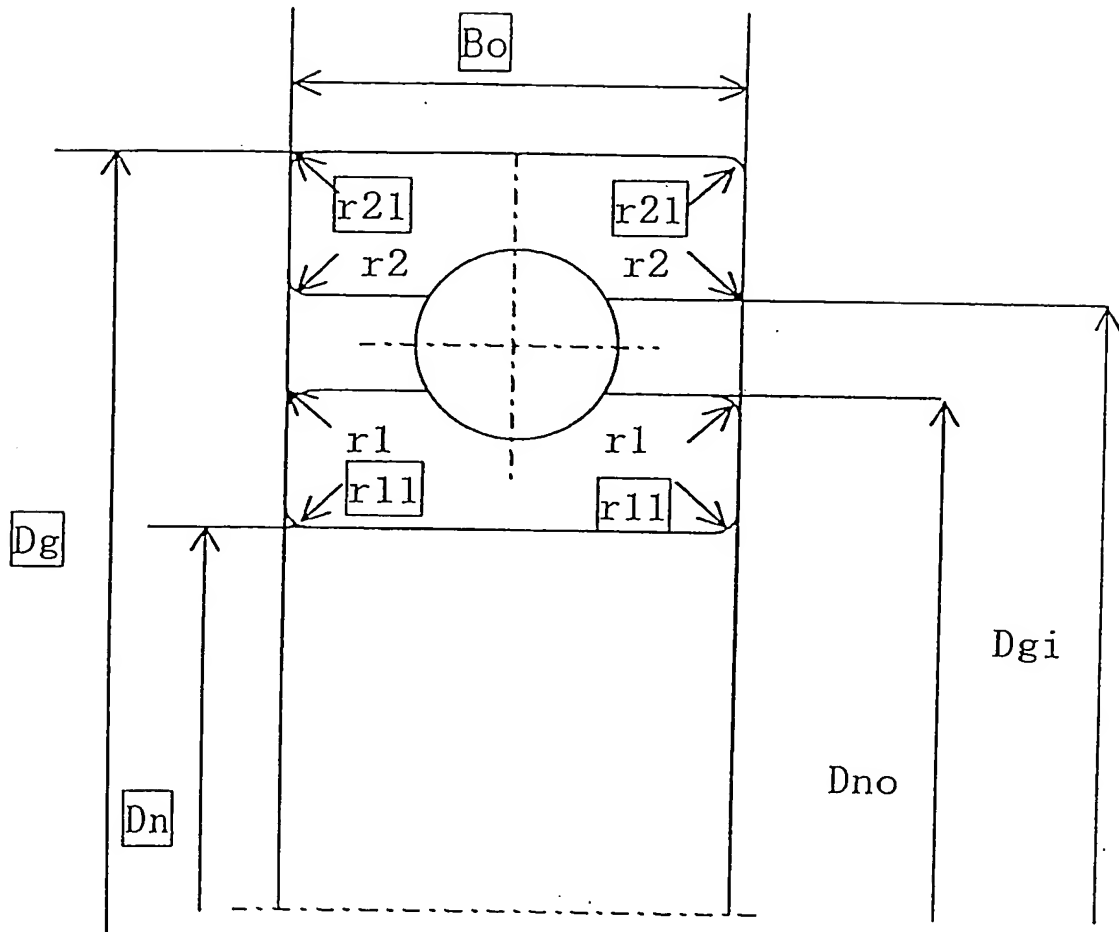


図 16 Fig. 16

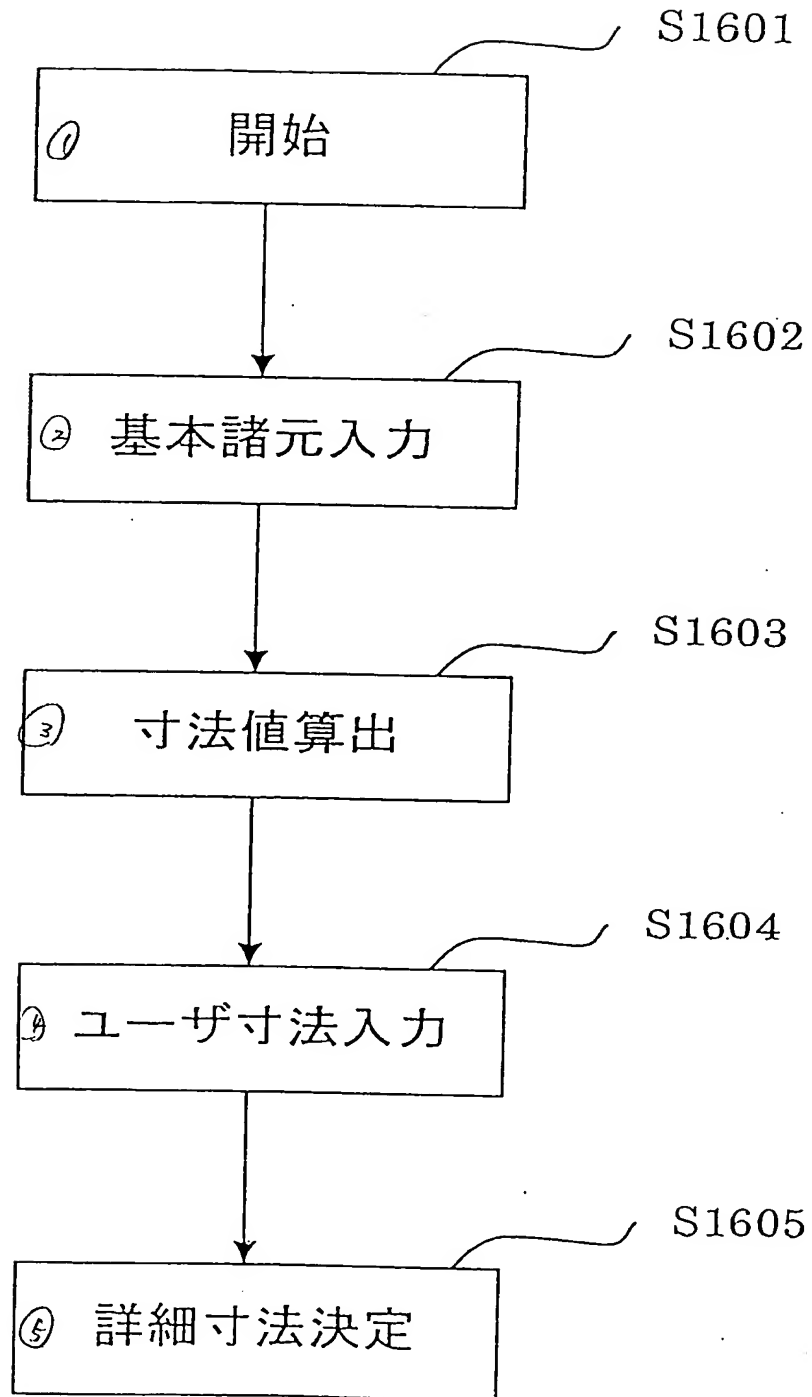




Fig. 17

① ユーザ寸法を入力してください。

r11=

r21 =

Fig. 18

Dn= 1 0.0
Dg= 5 0.0
Bo= 1 0.0
Dno= 2 0.0
Dgi= 4 0.0
r 1 = 0.2
r 2 = 0.3
r 1 1 =xxx
r 2 1 =xxx

OK

NG

Fig. 19

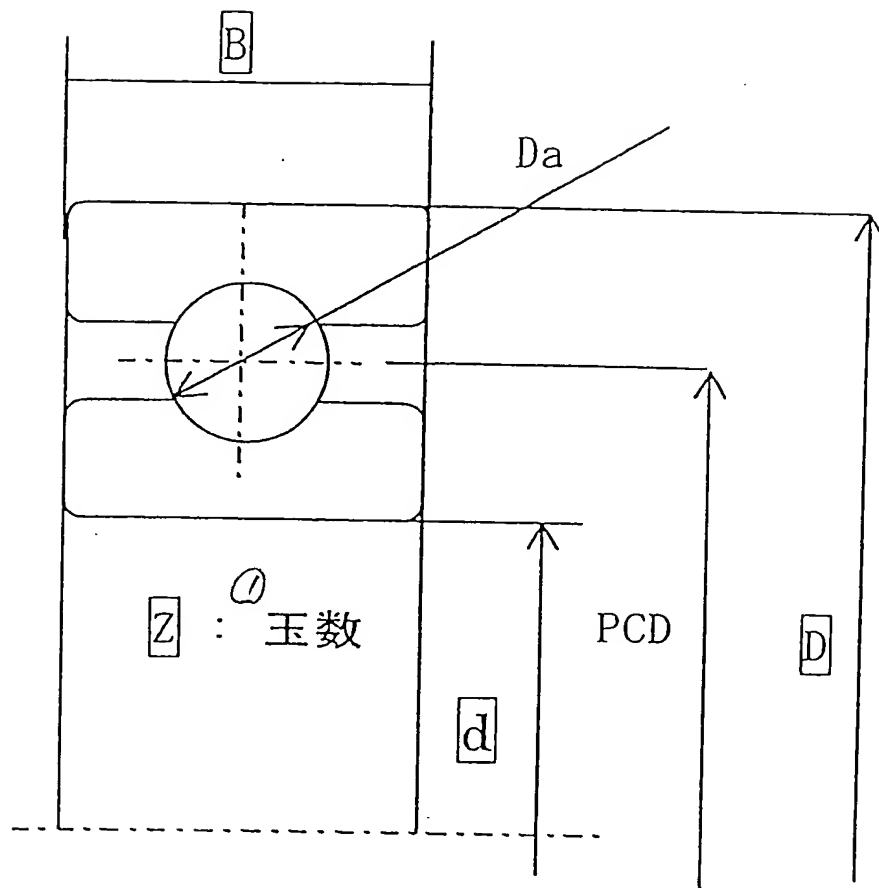


Fig. 20

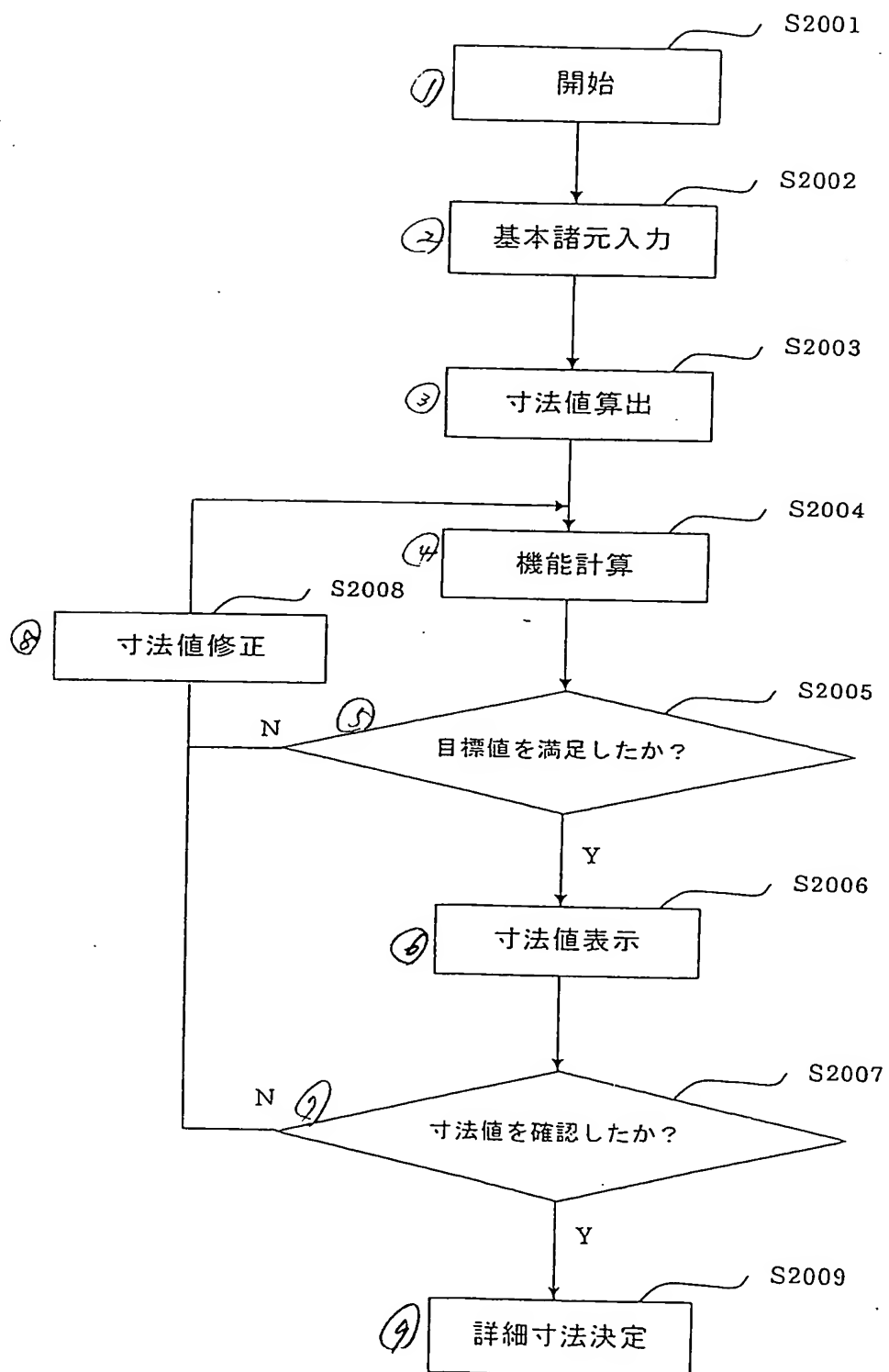


Fig. 21

① 基本諸元を入力してください。

D =

d =

B =

② 目標を入力してください。

③ 目標寿命 (L) =  h

④ 回転数 (R) =  Min

⑤ 荷重 (P) =  Kg

OK

22 Fig. 22

① 寸法値の自動計算処理

Da= 4.0

PCD= 31.0

Z= 14

☒ 2 3 Fig. 23

①

寿命計算処理

$$C = f(\dots, \text{PCD}, Z, \text{Da}\dots)$$

$$L = (C / P)^3$$

( $10^6$  rev)

$$L_h = L / (R * 60)$$

$$(\text{h}) \quad \text{min}^{-1}$$

図 24 Fig. 24.

① 目標値確認処理

IF  $L_h < L$  (

NG : ② 寸法変更して再計算  
)



図 2 5 Fig. 25

① 寸法値を確認してください。

D= 3 0 . 0	② 基本諸元
d= 1 8 . 0	② 基本諸元
B= 1 0 . 0	② 基本諸元
Da= 4 . 0	③ 計算値
PCD= 3 1 . 0	③ 計算値
Z= 1 4	④ 人手入力

OK NG

26 Fig-26

① 寸法を修正してください。

Z =

Da =

☒ 27 Fig. 27

D= 3 0 . 0
d= 1 8 . 0
B= 1 0 . 0
Da= 4 . 0
PCD= 3 1 . 0
Z= 1 5

OK	NG
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FIG.1:

- (1) Automatic Design System
- (2) inputting means 1
- (3) database 2
- (4) automatic designing means 3
- (5) draughting information forming means 4
- (6) display selecting means 5
- (7) attribute changing means 6
- (8) image displaying means 7

FIG.4:

- (1) start (S401)
- (2) input standard specification (S402)
- (3) automatic design (S403)
- (4) draughting information formation (S404)
- (5) display selection (S405)
- (6) attribute changing process (S406)
- (7) output result (S407)

FIGS.5, 12:

- (1) Input Standard Specifications

FIG.6:

- (1) Automatic Computing Process of Detailed Portions

FIG.7:

- (1) Draughting Information Formation

FIG.8:

- (1) Selection of Display

- (2) standard display
- (3) input value display
- (4) changed portion display
- (5) input & changed portion display

FIG.11:

- (1) start (S1101)
- (2) input the standard specifications (S1102)
- (3) compute dimension values (S1103)
- (4) decide detailed dimensions (S1104)

FIG.13:

- (1) Automatic Computing Process (1) of Dimension Values
- (2) Automatic Computing Process (2) of Dimension Values

FIG.16:

- (1) start (S1601)
- (2) input the standard specifications (S1602)
- (3) compute dimension values (S1603)
- (4) input user's dimensions (S1604)
- (5) decide detailed dimensions (S1605)

FIG.17:

- (1) Input User's Dimensions

FIG.19:

- (1) number of balls

FIG.20:

- (1) start (S2001)
- (2) input the standard specifications (S2002)

- (3) compute dimension values (S2003)
- (4) compute functions (S2004)
- (5) Is a target value satisfied ?(S2005)
- (6) display dimension values (S2006)
- (7) Are the dimension values confirmed ? (S2007)
- (8) correct dimension values (S2008)
- (9) decide detailed dimensions (S2009)

FIG.21:

- (1) Input the standard specifications
- (2) Input the targets
- (3) target lifetime (L)
- (4) number of revolution (R)
- (5) load (P)

FIG.22:

- (1) Automatic Computing Process of Dimension Values

FIG.23:

- (1) Lifetime Computing process

FIG.24:

- (1) Target Value Confirming Process
- (2) Compute again after the dimensions are changed

FIG.25:

- (1) Confirm Dimension Values
- (2) standard specification
- (3) computed value
- (4) manual input

FIG.26:

(1) Correct Dimensions